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TITLE: ULTRASONIC MOTOR
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ABSTRACT:

PURPOSE: To improve efficiency of a motor with longitudinal and torsional resonance frequencies in agreement by optimizing a material of head mass by using two kinds of materials with different density and different sectional area.

CONSTITUTION: An ultrasonic motor is constituted of a stator 20 and a rotor 21 which are a longitudinal-torsional compound vibrator. This head mass 11 is an Al alloy and a head mass 12 is stainless steel of higher density material

than the Al alloy with these head masses 11, 12 integrally connected by a means of welding or the like while by welding to a stainless steel-made bolt 14 provided with a flange 13. While the head mass 11 is in tapered shape with the sectional area decreased toward the rotor 21. As a result, at the time of strong or weak electric field driving, by enabling longitudinal and torsional resonance frequencies to perfectly agree, elliptic vibration of large amplitude can be generated in an interface between the stator 20 and the rotor 21 by slight power consumption.

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